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# Valvular Heart Disease

## LEAFLET ASYMMETRY PREDICTS DEVELOPMENT OF AORTIC STENOSIS

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**Background:** It has not been studied whether an asymmetric trileaflet aortic valve (AV) structure predisposes patients for aortic stenosis (AS).

**Methods:** Comprehensive diastolic echocardiographic AV leaflet parameter measurements in 86 subjects, ≥ 18 years age, with AS (mild, moderate or severe) and a previous echocardiography with normal trileaflet AV were compared to similar data from 86 age and gender matched control subjects without AS.

**Results:** Among 86 AS subjects, 39 had mild, 33 moderate, and 14 severe AS. The percentage variances among all the corresponding leaflet measurements were significantly larger in the AS group ($p<0.01$). Leaflet variance did not differ significantly based upon AS severity. In the AS group, only 4 (4.7%) had 3 equal-sized AV leaflets; 3 (3.5%) had 2 equal-sized leaflets, and 73 (84.9%) had all 3 leaflets different. In the no-AS group, 54 (62.8%) had 3 equal-sized AV leaflets; 13 (15.1%) had 2 equal-sized leaflets, and 16 (18.6%) had all 3 leaflets different. With a longer follow up interval, this proportion did not vary in both the AS and no AS groups when matched for either age and gender, or age and serum creatinine.

**Conclusions:** AV asymmetry predisposes to the development of AS. However, the degree of asymmetry does not correlate with the severity or rapidity of progression of AS. Our data suggest that turbulence secondary to asymmetric valve may predispose AV to become stenotic at advanced ages.